



## Installation Instructions and Technical Information for

# FusionSwirl

FusionSwirl™ is a decorated aluminum sheet that can be installed easily to various substrates, including drywall.

### STORAGE

Sheets should be stored indoors on a solid, flat, dry surface. Do not stack on concrete floor or any other surface that emits moisture. Lay sheets flat with proper support on the ends of sheets. Do not stand sheets on edge. Sheets should be stored in a cool, well-ventilated, dry area. Prior to installation, allow sheets to acclimate to the room temperature and humidity for 24-48 hours in the installation location.

### SUBSTRATE LAMINATION

If adhering the sheet to a substrate first (good quality hardwood plywood, high density particleboard, or MDF should be used as the substrate) - clean the substrate with a clean brush. Inspect the sheet for quality prior to fabrication.

### ALUMINUM SHEET LAMINATION

Laminate to substrate using techniques similar to working with HPL's. Cut the sheet to size with shears or a saw, and be sure that the blades are sharp. Leave the protective masking on the product during machining/installation. Cut into the sheet so that rough edges are on the back of the sheet. Sand down cut edges with 220 grit sandpaper. Files may also be used to de-bur sharp edges, and always file down on the decorative surface. It is always best to test cut first to confirm results.

### ROUTING INFORMATION

Sharp multi-fluted carbide cutters are necessary; the larger the diameter the cutter the better the results. It is important that the cutter travel direction is against the cutter rotation. ALWAYS CUT DECORATIVE SIDE UP (into the decorative face). When routing, the less material removed, the better. It is also important that the face of the material be protected from the base plate of the router. For edge trimming, high speed trimmers should be used (approximately 22,000 RPM) and will produce smooth burr-free edges. If using a CNC router refer to your CNC manual for optimal settings for cutting aluminum.

### SAWING INFORMATION

Table and/or panel saw: always use sharp carbide tipped blades with 80 to 100 teeth. Blade should be 8" to 12" in diameter, and at 0 degree rake for best results. It is always best to cut into the decorative face with the blade to minimize burring and edge distortion. Do not force material through saw. A constant feed rate will produce smoother cuts. Blade wax will promote better cuts.

## SHEARS

Blades must be clean, sharp, and properly maintained. Shears that are normally used to cut stainless may be dull and unreliable for precision cutting. Always sample cut first.

## LAMINATION/ADHESIVES

Always check with your adhesive supplier first to make sure that the adhesive that you select is suitable for your application (common types are: contact adhesives, cements – trowel on types such as FRP adhesives, panel adhesives, or double sided tapes, but specs do vary from specific item to item and from manufacturer to manufacturer – not all are compatible). In all cases, the adhesive manufacturer's instructions should be followed as to the use of the adhesive and substrate preparation.

- A) It is helpful to prep sheets prior to lamination by scuffing the backside with 80 grit sandpaper.
- B) When applying FRP adhesive, follow the adhesive manufacturer's recommendations for trowel style (e.g. appropriate height of adhesive bead left by trowel). It is important to apply adhesive carefully and follow all directions to prevent problems that may result from using too little or too much adhesive. 100% adhesive coverage applied to the entire back of the panel is recommended by using a "crosshatch" pattern. Adhesive should extend to all edges of the panel and should be applied directly to the back of each individual panel.
- C) Use only oil-based naphtha, or mineral spirits for adhesive clean up. Do not use ammonia, abrasive cleaners/pads, or harsh solvents like lacquer thinner. It is recommended that you test your adhesive system and/or cleaning agents with a sample piece of aluminum.

## LAMINATION TO DRY-WALL

- 1) If applying to painted drywall, aluminum sheets can be applied directly with drywall screws, drilled and countersunk or drilled with finish washers, and FRP adhesive. Pre-drilled holes should be slightly larger than the fastener to account for expansion and contraction of the sheet.
- 2) Prior to applying FRP adhesive, prep sheets by scuffing the backside with 80 grit sandpaper. When applying FRP adhesive, follow the adhesive manufacturer's recommendations for trowel style (e.g. appropriate height of adhesive bead left by trowel). It is important to apply adhesive carefully and follow all directions to prevent problems that may result from using too little or too much adhesive. 100% adhesive coverage applied to the entire back of the sheet is recommended by using a "crosshatch" pattern. Adhesive should extend to all edges of the sheet and should be applied directly to the back of each individual sheet.

- 3) Use only oil-based naphtha, or mineral spirits for adhesive clean up. Do not use ammonia, abrasive cleaners/pads, or harsh solvents like lacquer thinner. It is recommended that you test your adhesive system and/or cleaning agents with a sample piece of aluminum.

## MAINTENANCE

Clean surfaces with a soft cloth using a household cleaner – waxes, Windex type solutions, or ordinary soap and water. Good furniture or automobile waxes can provide additional protection.

## **Technical Information**

### ALUMINUM

#### Description

Item Shape	Flat sheet
Material	Aluminum 3003
	Aluminum 5005
Temper	H14
Thickness	0.025"
	0.032"
Width	48"
Length	96"
	120"
Specs	ASTM B209

#### Mechanical Properties (ASTM B557)

Tensile Strength (ksi)		22.0
Yield Strength (ksi)		20.7
Elongation %		4.0
Taber Abrasion (ASTM D-1044)	CS-10 Wheel	500 g 10,000 cycles

### DETAILS

- Aluminum is in stock as 4' x 8' and 4' x 10' sheets. Other sizes are available on special order.
- Maximum image size is approximately 5' x10', nominal (image size 58" x 118").
- Finishes available include Gloss and Satin.

## CONDITIONS & WARRANTY

Advanced Technology, Inc. believes all information contained herein to be correct. It is the responsibility of the fabricator/customer to completely test the adhesives and methods of fabrication to ensure that the results are satisfactory. ATI is not responsible for any fabrication or ancillary costs involved with using FusionSwirl products.

All shipments are to be inspected within 10 working days after delivery. We are to be informed in writing of any potential adjustment necessary. The seller's only obligation will be to replace defective sheets on a one to one basis. Neither the manufacturer nor the seller shall be liable for any additional damage or loss, directly or indirectly, arising as a result of using FusionSwirl products.

Slight imperfections and color variations from sheet to sheet are possible and considered normal. Please inspect each sheet carefully before fabrication to ensure it meets your needs.

## CAUTION

**FusionSwirl and other metal laminates will conduct electricity. To avoid electrical shock and damage to equipment, please make sure that all electrical circuits, tools, and devices used with FusionSwirl are properly grounded.**